

# THE STONE INDUSTRY OF SINGA—ABU HUGAR

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The artifacts collected at Abu Hugar by Mr. A. J. Arkell may be considered as the industry of the Singa deposit, in view of their geological setting.\* True implements and improvised tools occur. Fairly heavy, simple core-tools, flakes, and utilized cores represent the first, hammerstones and pounders the second. Most are composed of poor and refractory materials, the study of whose response to treatment as evidenced by scars, is highly instructive.

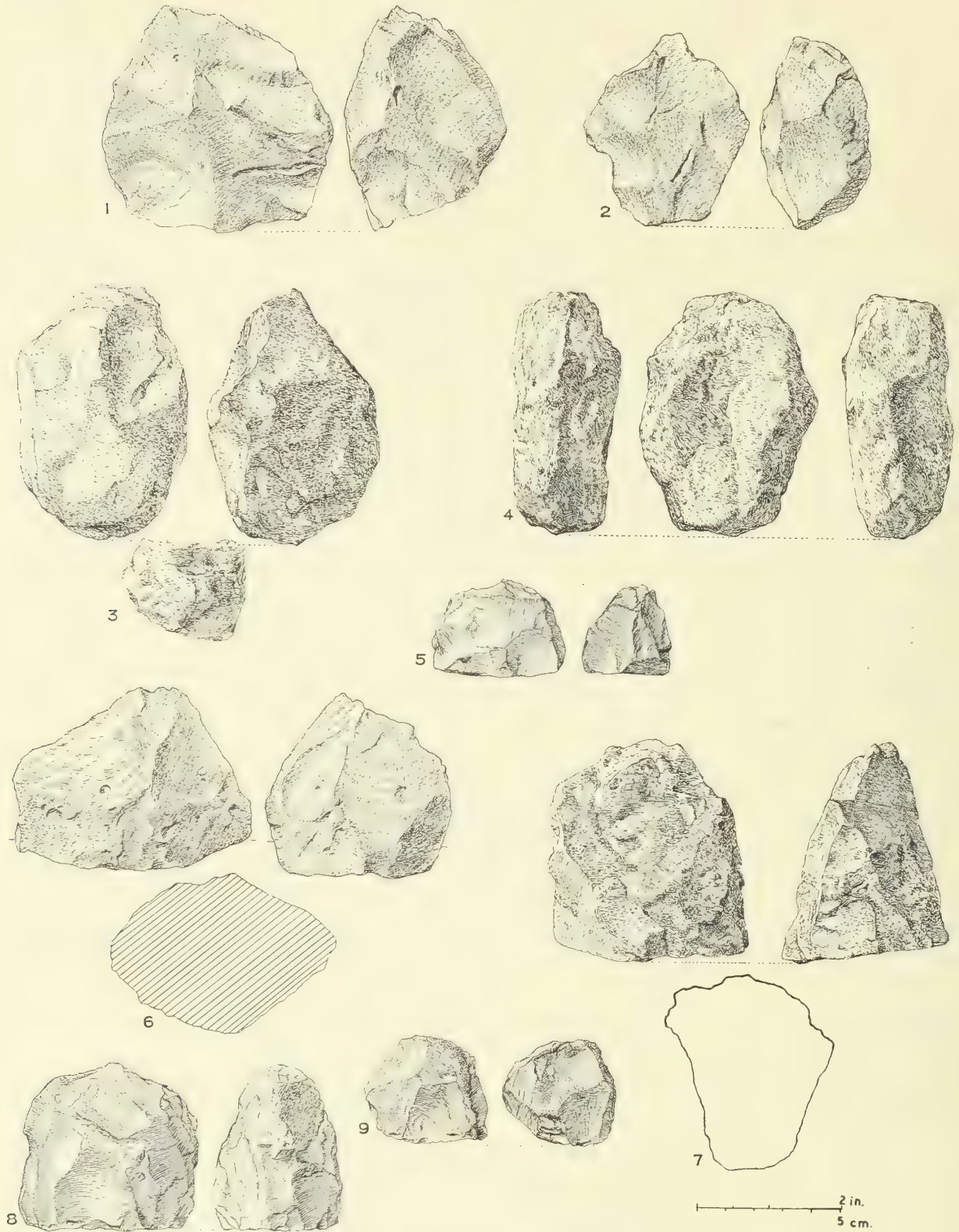
While, then, the collection at first sight looks crude, yet inspection shows that its ingredients are the relics of knappers well versed in flaking techniques. For, from pieces of intractable stone they produced several quite definite forms. These help us to assess the series. Representative and particularly remarkable specimens are figured here. They may be said to belong to a moderately heavy equipment lacking fine flakes. This characteristic is undoubtedly due to the nature of the raw material.

*Core-tools.*—These consist mostly of cobbles and lumps brought to an edge by bold flaking, hammerstones having certainly been used in this process. Although some of these products of the industry may have served as hand-axes, yet on typological standards none can be so described. Rather are such objects to be regarded as choppers of the elementary kind made by man throughout the whole course of his stone-using development.

From the wear apparent on part of its sharp middle edge, the artifact, No. 1 (silcrete sandstone) which is not unlike a Levalloisian core, seems to have been put to some forcible use. Bruises on the untreated surface (not seen in drawing) suggest that the tool also served in conjunction with a hammer. A smaller version of this implement is represented by No. 2, flaked in the same material. It exhibits no signs of wear; but pronounced abrasions at one end of a profusely flaked cobble of vein-quartz, No. 3, point to considerable use. This specimen, fitting comfortably into the clasped hand, is furnished with sharp edges. One, long and sinuous, intersects another, short and irregular, at the end opposite the somewhat injured butt. Since the ridges on one flaked surface under the rounded back are dulled, it is probable that the tool served both as a heavy scraper and as a cutting instrument.

It is likely that No. 4 was employed as a two-edged side-scraper rather than as a chopper. Better perhaps than any of its companions, this implement demonstrates by the character of its treatment the local shortage of tractable raw material. It consists of a lump of reddish stone, probably a ferruginous and silicified sandstone, from which a few chips were detached from the sides of both faces. How indocile the stone proved under blows appears from the irregular and shallow scars.

\* See Arkell, A. J. 1949. The Old Stone Age in the Anglo-Egyptian Sudan. *Sudan Antiquities Serv. Occ. Papers*, 1: 45-47.



FIGS. 1-9. Stone artifacts from Abu Hugar. Descriptions are given in the text (pp. 43, 45).



More positive forms of heavy scrapers are present. The commonest are steep core-types, some recalling the rare "tea-cosy" shape of European Acheulian industry, others more definitely the European Upper Palaeolithic core-scraper of sloping finely flaked faces. In this industry from the valley of the Blue Nile, it seems that little of the material was worked for the purpose of obtaining flakes or flake-blades, for its poor quality hardly allowed the production of more than core-scrapers. This is indicated not only by the edges of the artifacts but also by the size of the scars. These prove that the flakes removed would have been too small for use by people whose kit cannot be shown to include any really delicate tools. No. 5 (vein-quartz) and No. 6 (pebbly silcrete sandstone) are illustrated as characteristic of the "tea-cosy" sort, and No. 7 (a poor vein-quartz) of the more advanced type. In the first of these tools, the upper edge, which results from the flaking of the lump, is bruised from use; in the others it retains its pristine sharpness. The shape of the working-edge of No. 7 can be appreciated only by a glance at the outline of the base, which accompanies the drawings of the implement.

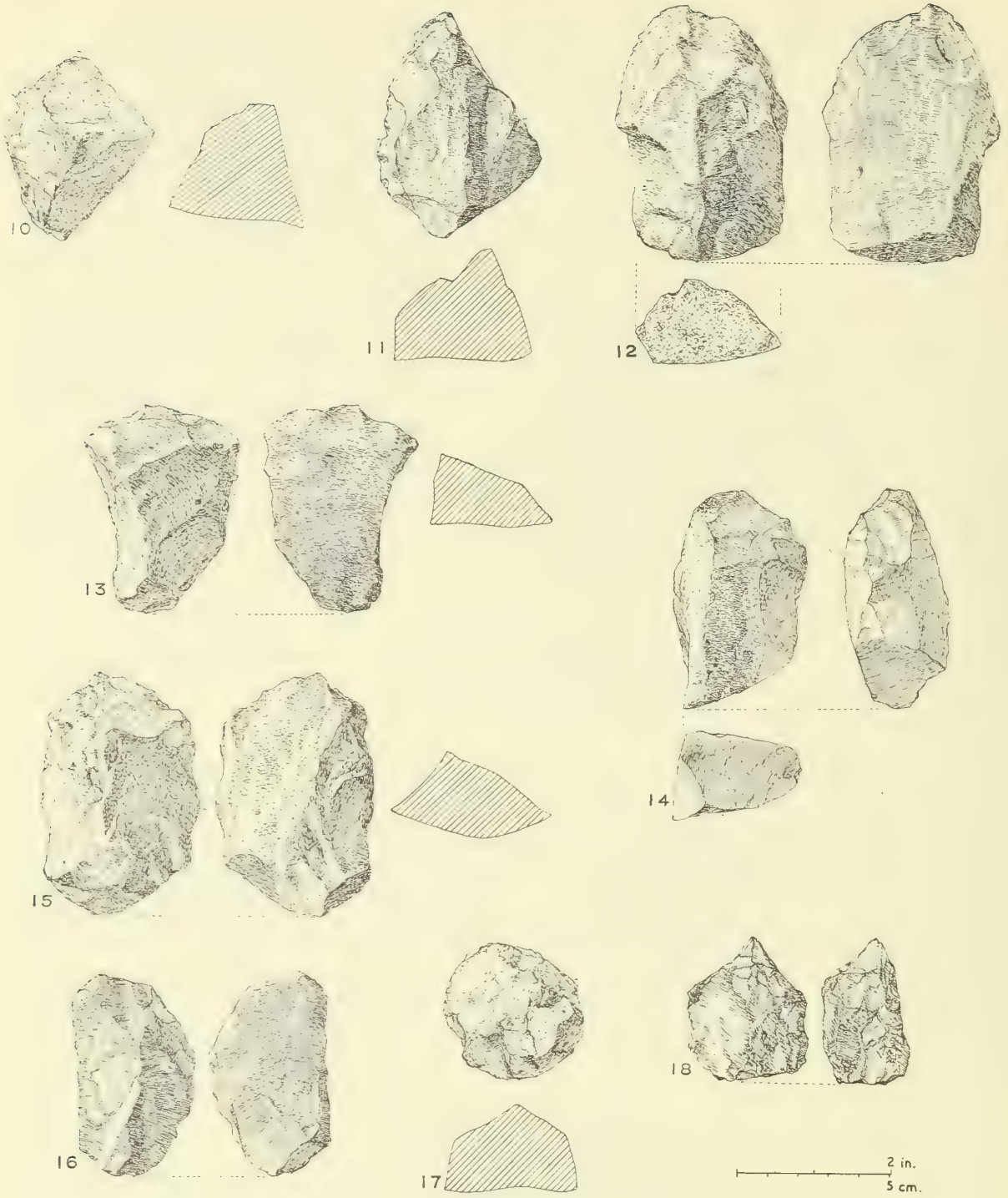
No. 8 (vein-quartz), finely and symmetrically flaked from the base in quite advanced style, may have been intended as a scraper. Its circumference, however, exhibits no signs of wear, unlike its apical edge formed by the intersection of the scars. It is conceivable, therefore, that this artifact was used as a sort of chisel or axe, and was fitted into a holder, such as a large bone or piece of wood. In No. 9, of finer material and much smaller, we have a tool which may be referred to the same category.

A few small discoidal cores flaked to a sharp, sinuous circumferential edge, and some walnut-sized stones, irregularly scarred and slightly bruised, may possibly have been used in slings. Except for these objects, the assemblage includes nothing which can be considered a weapon.

*Flake-tools.*—These comprise implements made on pieces or slices of stone and on true flakes. Scrapers are common and come under ordinary headings.

1. Several well-defined side-scrapers are present. Two are figured as characteristic of the industry, namely Nos. 10 and 11. Both are carefully made in pieces of stone, the height of which alone would make these two specimens worthy of notice. In these the signs of workmanship contrast, and reflect in an interesting manner the difference in the tractability of the materials. The curved edge of the smaller, No. 10 (quartzite) has been achieved by the steep removal of a few short flakes. In the second and larger, No. 11 (a fine brown silcrete sandstone), the manufacturer found it possible to detach a close succession of squills by percussion, so producing an edge much superior to that of the companion implements.

2. True end-scrapers are present, and show certain features of interest. Thus, the heavy example, No. 12 (brown cemented sandstone) comprises a thick flake with wide inclined striking-platform. Naturally rounded opposite the butt, the end has been treated by short flaking for a little way on the sloping face and curved margin of the nether surface. Another specimen, No. 13 (also of brown cemented sandstone), though now defective in its lower part, is remarkably well made. Fashioned from a flake, which was removed from a prepared core—to judge from the ridges and scars—its working-end exhibits signs of treatment on both faces, as do the end and right side, but only on its upper surface.



FIGS. 10-18. Stone artifacts from Abu Hugar. Descriptions are given in the text (pp. 45, 47).



3. Combinations of the side- and end-scrapers are represented. In the two specimens figured, the working-edges have been made by removing small flakes from the upper surface at the end, and on the nether surface along a margin. No. 14 (a coarser cemented sandstone) consists of a large piece struck from a lump, the detaching blow having been powerful enough to cleave quartz and other inclusions. Only one of its long edges has been trimmed. On one side the end is bruised by hammering. No. 15 (close-grained pebbly brown silcrete sandstone), besides being dressed at the end on the face, has been trimmed along both long margins on the reverse. A finer tool is represented by No. 16 which is made on a quartz flake. As the scars and ridges on its upper surface proclaim, this was removed from a prepared core. Moreover, the long convex edge has been as carefully treated as the material allowed by the removal of flat squills from the nether surface. The end seems to have been put to considerable use. Below the point of impact on the narrow striking-platform there occurs a clear but narrow swelling or ridge of percussion.

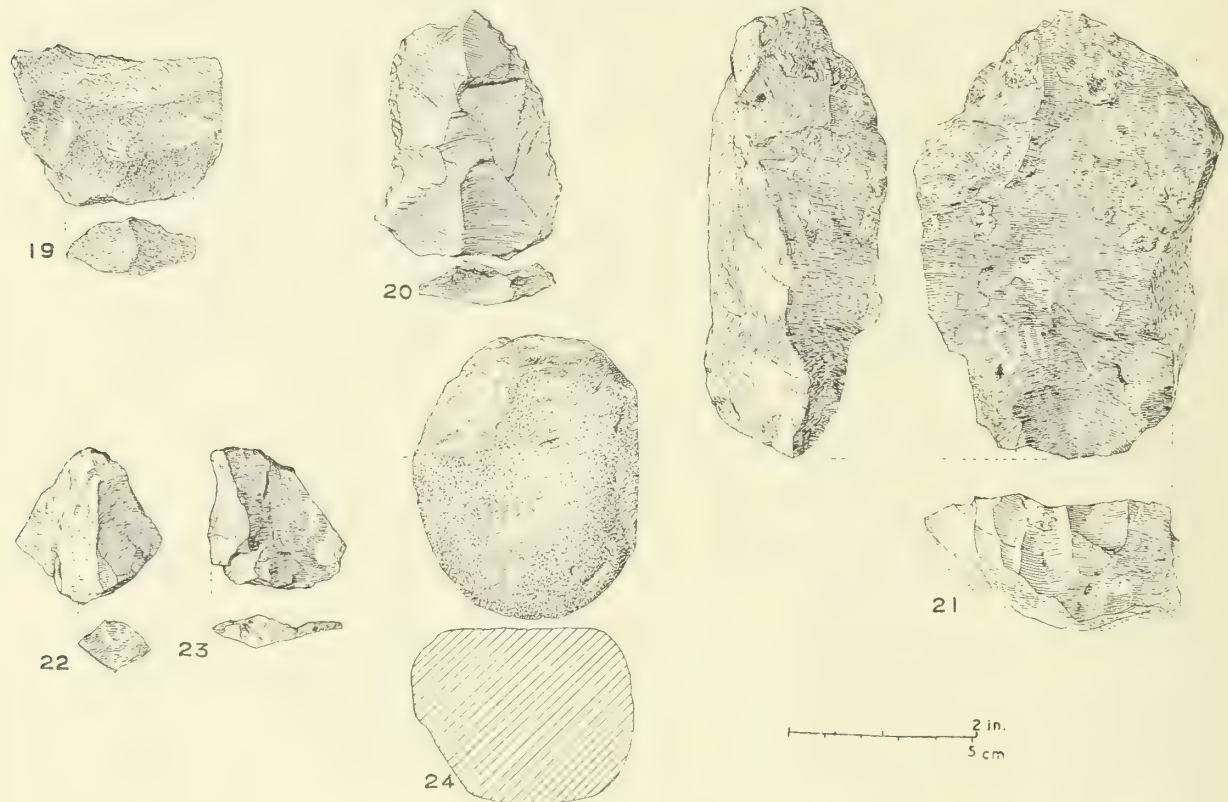
4. A steep round scraper of vein-quartz, No. 17, made from a sliced pebble, is illustrated as exceptional. It is particularly well manufactured, but owing to the poor quality of the stone, the edge of the tool, which extends all round, has not been produced by retouch, but by bold flaking. This working has involved almost the whole of the surface, the nether one exhibiting the negatives or hollows of percussion. These show where small trimmings were detached. In its typology this specimen would appear to mark a distinct advance on the general run of implements in the group.

5. A curious and yet efficient perforator is shown by the drawing of No. 18. Basically the implement consists of a thick portion of a split quartzose pebble, its point executed by the removal of material on each of the steep sides of the median ridge. The trimming on the right is more pronounced than on the left, and extends for the whole length of that side. It is interesting to observe that the edges of the retouched hollows on either side of the point could have served for scraping.

6. Two veritable knives stand out, one, No. 19, made from a thick vein-quartz flake, the other, No. 20, from a blade of green lava-type rock (aphanite). The first consists of a piece struck from prepared material. Its principal separation surface displays a marked swelling of percussion, not unlike the bulb in better stone. The long cutting-edge results from the removal of a long narrow flake from the end opposite the butt. On this there appear two pronounced facets. They are, however, not truncated scars such as would result from the detaching of a parent flake from a treated core, for they originate from blows applied to the platform after the piece was detached from the lump. Finer trimming appears also for a little way on the right side of the butt. All these traces show that the lower end was treated to reduce unwanted roughnesses. So dressed, the implement could also have been used as a butt-end scraper of the type which first occurs in the Middle Acheulian of western Europe, and which later is so characteristic of Levalloisian industry. The second tool is even more interesting. Like its companion, it has been struck from well-prepared material, certainly a core. This, to judge from the character of the scars, would assuredly be of the type which, usually regarded as Levalloisian, had its beginnings in well-developed Middle Acheulian industries. Hence the butt of this artifact exhibits typical truncated flake-scars from the preparation of the striking-platform,

and the upper surface those resulting from the blocking-out of the parent lump. The most notable feature, however, consists of fine retouches along the two lateral margins, slightly convex on the right and almost straight on the left.

7. Although there are several flakes struck like No. 20 from material prepared in characteristic Levalloisian manner, yet unfortunately only one core, No. 21, is present to exemplify this method of obtaining large flat flakes. Consisting of a block of quartzite, from which but few pieces have been removed, the specimen deserves notice for the very simplicity of its scarring. A side and end have been flaked, and from the platform so treated a large, wide flake was struck. But, as is attested by a



FIGS. 19-24. Stone artifacts from Abu Hugar and Singa. Descriptions are given in the text (pp. 47, 48).

ridge a short distance from the hollow of percussion, the stone proved too refractory for further attention. Despite this, on the ground of technology the identity of the example with a true "tortoise-core" is obvious. Small flakes which came off in the preparation of such cores are represented by Nos. 22 and 23 (respectively of brown silcrete sandstone and vein-quartz).

*Improvised tools.*—The collection is not comprehensive enough to permit one to assert that the anvil technique, or flaking and shaping on a fixed block, was practised in the industry of Singa and Abu Hugar. It is clear, however, that hammerstones were used. The specimen, a cobble of fine-grained pink aplitic rock, figured as No. 24, deserves more attention than is usually paid to such improvised tools. This one exhibits all the convincing abrasions of the purposes and the methods



to which it was put. Thus, an end is boldly scarred from its having been used to detach fairly large flakes in rocks at least as refractory as that of which it is composed; and the other is finely pitted from treating hard but more tractable material. One of its flatter surfaces is also dented as if the stone had served as a small anvil; and one bruised area suggests that the tool was used to tap a smaller stone. This object has a smaller companion of quartz which, if it does not reveal so much, yet shows by its freely scarred and abraded surface that it was long employed in flaking. Another, a spherical implement of silcrete, belongs to the same category of accommodation-tool. It is, however, worn differently from the others in this list. The abraded surface, forming a complete zone of wear, indicates that the stone served as a pounder. That it was used to crush pigments is immediately suggested by the lumps of red ochre which Mr. Arkell has found in association with the artifacts at Abu Hugar.

*Cultural affinities.*—This industry owes its archaic aspect to the low grade of practically all the materials used. At first sight this is enhanced by what seems to be crude workmanship. Actually, however, apart from the signs of wear on the edges of some of the tools, the surfaces show no traces of injury such as might result from carriage in stone-charged deposits. Most indeed are in the same fresh condition as when they left their manufacturers' or users' hands. These points argue for their occurrence *in situ* in the containing beds, and indicate that the industry should not be assigned to a culture of relatively great antiquity in the African Palaeolithic sequence. To the contributor of these notes, the series demonstrates that what looks very ancient may not in fact be so. This is upheld by the absence of hand-axes, and by the presence in the assemblage of well-defined forms such as nowhere occur as products of the older Palaeolithic industries. In the writer's opinion the most decisive specimens are the high core-scrapers, small and large, and the short edge-retouched, flat blade-like flake of developed Levalloisian facies, No. 20. Even without the support of other tools, such as fine flake-blades and gravers (*burins*), the example No. 7 resembling an Upper Palaeolithic blade-core would alone herald the break with old traditions, and indicate well-advanced African Middle Stone Age workmanship. This would assuredly be much more apparent were the artifacts fashioned in finer materials, chalcedony, jasper, silicified wood, or even high-grade quartz.

Notwithstanding the foregoing, flakes with faceted butts and specialized cores are numerous enough to demonstrate that the Singa–Abu Hugar industry has affinities with those in which Levalloisian stone technique is dominant. These links must therefore be sought in a complex later than one embracing the industries of the hand-axe group. On typology, and in view of what is now known of the Stone Age cultures of Africa, it appears to the writer that the closest parallels to the Singa–Abu Hugar facies is provided by the advanced Levalloisian or Proto–Still Bay industry of Lochard, South Rhodesia.\* The output of the Lochard industry does not, however, include such culturally advanced forms as the high cores and core-tools described and figured here, which particularly mark this collection. Hence it is believed that this industry

\* Neville Jones, *The Prehistory of Southern Rhodesia*, Museum Memoir No. 2 (published for the Trustees of the National Museum of Southern Rhodesia), Cambridge, 1949, pp. 34–36.



may correspond in date to one more developed than that of Rhodesia, with which comparison has been made. Future research must be left to decide whether there is an extension of the Still Bay complex as far north as the Blue Nile. Great interest and importance, however, must always attach to this, the earliest industry so far discovered in the Sudan in association with extinct animals and with a human skull.

Thanks are due to Mr. G. Andrew for having kindly identified the rocks used in the industry of Singa and Abu Hugar; and tribute is given to Messrs. C. O. Waterhouse and C. H. Stokes for their skilful drawings of representative specimens.

The collection of stone implements on which this report is based comprises fifty-one specimens. Thirty-five of these are preserved in the Khartoum Archaeological Museum. Through the courtesy of the Sudan Government Museums Board the remainder (including those shown in figures 2, 3, 6-8, 10, 13, 15, 17-20, 22, 24) have been deposited in the Department of Geology, British Museum (Natural History): registered numbers: E.1463-1476, figured in the above order; E.1477, E.1478 unfigured.



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